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## SAND-DUNE COLLECTING.

By W. KNAUS.

For the past four years it has been my custom to collect Coleoptera among the sand dunes and "blow-outs" along the northern valley of the Arkansas river and some 20 miles southwest of McPherson, Kan., and two or three miles southwest of Medora, a station on the Rock Island railway, in Reno county.

The sand dunes and hills are the sport of the winds which cut out immense excavations from the white sand, piling it out on the prairie in great heaps. The margins of these dunes and the excavations are the favorite resort of several species of Cicindelidae, Scarabeidae, Tenebrionidae and other Coleoptera.

I first collected in this locality in May, 1891, making my first trip on the 5th of the month. Before reaching the sand hills, I took along the railway track numbers of *Cicindela vulgaris* and *repanda*. Around the base of the dunes and the bottoms of the "blow-outs" *Cicindela scutellaris* were numerous and *formosa* less so. In the same locality I took a single *Geopinus incrassatus*, an *Aphodius*, *Trox aequalis*, two or three *Melanotus fossils*, a few *Anomola binotata* and *Eleodes extricata*, and two specimens of an Euphorid, since identified by Mr. Chas. Liebeck, of the American Entomological Society, as *Stephanucha pilipennis* Kraatz. Of this rare species I collected 10 specimens in the same place in May, 1893, and two specimens in May of this year. A single specimen, I believe, was collected by Professor Popenoe in the spring of 1893, at Manhattan.

The willows on the sand dunes yielded one specimen of *Gastroidae formosa* the first season, and two specimens this season.

In 1892 the season was two weeks later, and my collecting in this locality was done in the last half of May. Associated with *Cicindela scutellaris* and *formosa*, I took a few specimens of the beautiful *venusta* taken in western Kansas, but never before in central Kansas. I found none of this variety in 1893, but the present season they were almost as numerous as *scutellaris* or *formosa*, and I added a fine series to my duplicates.

The spring of 1893 was unusually cold and windy, and the dunes were higher and the "blow-outs" deeper than ever. My best collecting ground that season was at the bottom of the "blow-outs" from 7 to 9 a. m. The Coleoptera were sluggish and easily taken. Ten specimens of *Stephanucha pilipennis* were taken as they slowly walked over the sand or were found dead. Several *Anomola binotata*, one *minuta* and a fine lot of *Chalcodermus collaris* were taken along the sides of the "blow-outs." I also took two fine specimens of a black, shiny *Cremastochilus*, since identified as *nitens*. The carabidae taken were represented by a few specimens of *Dyschirius globulosus*, *Tachys incurvus*, *Pterostichus erythropus*, *Nothopus zabroides*, *Stenolophus ochropezus*, *Harpalus herbivagus* and a *Harpalus* sp.

The Chrysomelidae taken were a *Graphops nebulosus* and *Pachybrachus tridens*. The Staphylinidae were represented by a *Philonthus varius*, a *Philonthus* sp., and a *Stenus* sp. Two or three species of *Saprinus*, a species of *Limnichus* not before taken in the state; several *Canthon ebenus*, *Chalepus*

trachepigus, two or three *Cotalpa lanigera* on willow catkins; a few *Lacn rectangularis* and a pretty *Cardiophorus*, *Blapstinus dilatatus*, and *moestus* not before taken in the state, a *Tyloderma foveolatum*, a *Sphenophorus pertinax*, several *S. sculptilis* with another species of the same genus, were also added to my collection that year.

The season of 1894 was marked by an abundance of several handsome and desirable species, and the total or almost total absence of others. I took only two specimens of *Stephanucha*, and not a single specimen of *Chalcodermus collaris*, so numerous the season before. *Cicindela scutellaris*, *formosa* and *venusta* were unusually abundant, and I this year succeeded in taking a fine series of the handsome, and not at all common, *Cremastochilus nitens*. Many of these shining fellows had a splotch of dull red on the center of each wing cover. They were sluggish and easily taken in the morning, but very active during the hotter parts of the day. I also took numbers of *Canthon ebenus* and *Cotalpa lanigera*, and two specimens of the rare *Serica curvata*; a few specimens of *Strigoderma arboricola* were also taken, and a number of *Lachnosterna crassissima*, and a single specimen of a *Lachnosterna* sp.

A species of *Blapstinus* and a few *Luperus brunneus* completed the collecting in this locality the present season. I consider it one of the best collecting grounds in the state, and shall endeavor to work it each year.